

# METHOD AND SYSTEMS FOR OPTIMIZING HIGH-SPEED SIGNAL TRANSMISSION

## Abstract

A method and systems for automatically adjusting the  
5 parameters of signal emitter in a synchronous high-speed  
transmission system, is disclosed. According to the method of the  
invention, the quality of a high-speed received signal is  
analyzed for a plurality of sets of parameter values and the one  
producing the best signal quality is selected. In a first  
10 embodiment, the quality of the high-speed received signal is  
determined by analyzing a digital eye characterizing the signal  
behavior, obtained by over-sampling the high-speed received  
signal. In a second embodiment, the quality of the high-speed  
received signal is determined by analyzing the behavior of the  
15 phase rotator used for data sampling. Finally, in a third  
embodiment, the quality of the high-speed received signal is  
determined by analyzing a digital eye, obtained by moving the  
position of a phase rotator from one end to the other and  
sampling data at each position.